

10/08/87/54

Abstract of the Disclosure

5 An apparatus for controllably generating sparks
is provided. The apparatus includes a spark generating
device; at least two output stages connected to the spark
generating device; means for charging energy storage
10 devices in the output stages and at least partially
isolating each of the energy storage devices from the
energy storage devices of the other output stages; and, a
logic circuit for selectively triggering the output stages
to generate a spark. Each of the output stages preferably
15 includes: (1) an energy storage device to store the
energy; (2) a controlled switch for selectively
discharging the energy storage device; and (3) a network
for transferring the energy discharged by the energy
storage device to the spark generating device. In
20 accordance with one aspect of the invention, the logic
circuit, which is connected to the controlled switches of
the output stages, can be configured to fire the stages at
different times, in different orders, and/or in different
combinations to provide the spark generating device with
output pulses having substantially any desired waveshape
and energy level to thereby produce a spark having
substantially any desired energy level and plume shape at
the spark generating device to suit any application.